

01/21/14 Agenda

- Review Quiz on Section 5.3
- Review Homework - Worksheet 5.5
- Review Sections
 - 5.4 - Point Slope Form of a linear equation
 - 5.5 - Standard Form of a linear equation
- Homework - Worksheet 5.4-5.5 Review
- **Wednesday 01/22 (TOMORROW) - Quiz on 5.4-5.5**

Warm Up - Homework out!

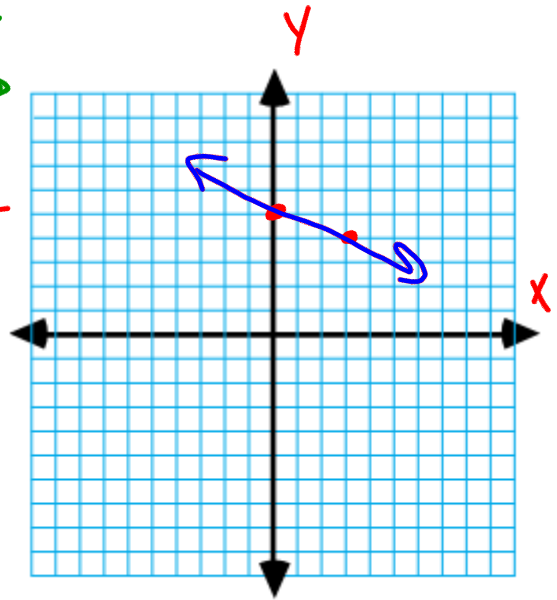
$$Ax + By = C$$

Find m and b so we can graph this equation:

$$x + 3y = 15 \quad m = \frac{-A}{B} = \frac{-1}{3}$$

$$\begin{aligned} A &= 1 \\ B &= 3 \\ C &= 15 \end{aligned}$$

$$b = \frac{C}{B} = \frac{15}{3} = 5$$



5.4-5.5 Review

Targets 5E & 5F

January 21, 2014

Forms of a Linear Equation:

Slope-Intercept Form: $y = mx + b$

Point-Slope Form: $(y - y_1) = m(x - x_1)$

Standard Form: $Ax + By = C$

5.4-5.5 Review

Targets 5E & 5F

January 21, 2014

Write in point-slope form the equation of the line that passes through the given point and slope:

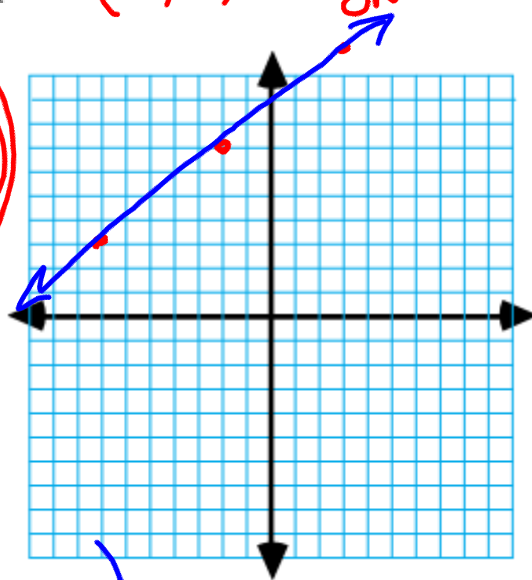
$$(y - y_1) = m(x - x_1)$$

$m = \text{SLOPE}$
 (x_1, y_1) ANY POINT ON LINE

$m = \frac{-4}{-5}; (-2, 7)$

$$(y - 7) = \frac{4}{5}(x - (-2))$$

$$y - 7 = \frac{4}{5}(x + 2)$$



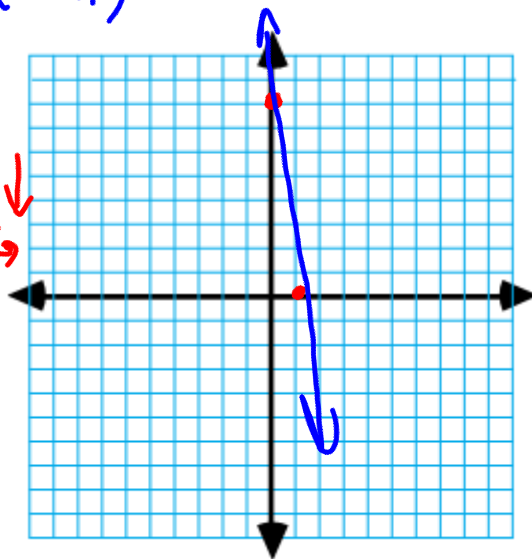
$m = -8; (0, 8)$

$$(y - y_1) = m(x - x_1)$$

$$y - 8 = -8(x - 0)$$

$$y - 8 = -8x$$

$\frac{-8 \downarrow}{1 \rightarrow}$



Standard Form (SF):

$$Ax + By = C$$

1. X and Y are on the left.
2. A , B , and C are whole numbers (integers), NO fractions.
3. No GCFs, (no numbers in common between factors).
4. A and B are NOT zero.
5. The first number is usually positive.

Put equation
into SF:

This is the opposite of solving for y and putting it into SIF:

$$y - 1 = \frac{1}{2}(x + 2)$$

$$y + 1 = -2(x + 7)$$

$$y = -6x - 3$$

5.5 - Standard Form of a Linear Equation

Target 5F

Graphing
SF:

Method 1 - Rearrange into Slope-Intercept Form & graph:

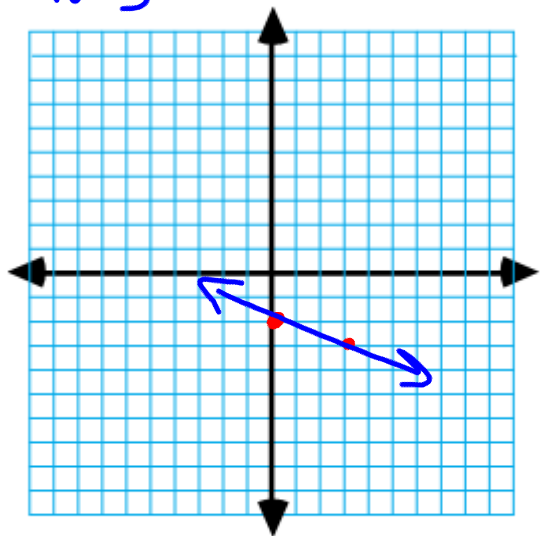
$$y = mx + b$$

$$\begin{aligned} A &= 1 \\ B &= 3 \\ C &= -6 \\ \frac{-A}{B} \end{aligned}$$

$$\begin{array}{r} +1x + 3y = -6 \\ -x \quad \quad \quad -x \\ \hline 3y = -x - 6 \\ \underline{3} \quad \quad \quad \underline{3} \end{array}$$

$$y = -\frac{1}{3}x - 2$$

$$m = -\frac{1}{3} \downarrow \rightarrow$$



5.5 - Standard Form of a Linear Equation

Target 5F

Graphing
SF:

Method 2 - Use short cuts:

$$m = \frac{-A}{B}; b = \frac{C}{B}$$

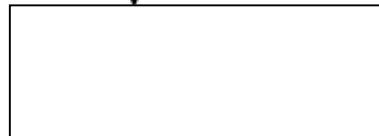
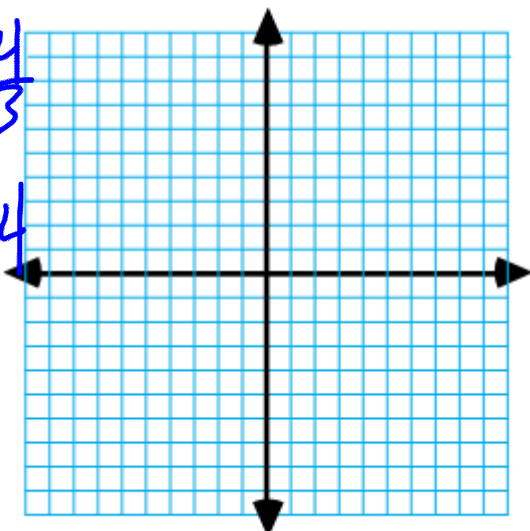
$$8x - 6y = 24$$

$$A = 8 \quad m = \frac{-8}{-6} = \frac{4}{3}$$

$$B = -6$$

$$C = 24$$

$$b = \frac{24}{-6} = -4$$



$$-3x + 2y = -8$$

